

IN THE CLAIMS:

Please amend claims 10, 14 through 19, 45, 55, 64 and 66 herein. Please cancel claim 65 without prejudice or disclaimer. Please note that all claims currently pending and under consideration in the above-referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-9 (Canceled)

10. (Currently amended) A method of selectively etching silicon, comprising: exposing a silicon layer on a semiconductor substrate to an etch solution consisting of tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, ~~phenol~~, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof; and removing the silicon layer without removing at least one of an exposed oxide layer, an exposed nitride layer, and an exposed polyimide layer also present on the semiconductor substrate.

Claims 11-13 (Canceled)

14. (Currently amended) The method of claim 10, wherein exposing ~~a~~the silicon layer on ~~a~~the semiconductor substrate to ~~an~~the etch solution consisting of TMAH and the at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, ~~phenol~~, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of TMAH and propylene glycol.

15. (Currently amended) The method of claim 10, wherein exposing ~~a-the~~ silicon layer on ~~a-the~~ semiconductor substrate to ~~an-the~~ etch solution consisting of TMAH and ~~the~~ at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, ~~phenol~~, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of from approximately 1% by weight to approximately 10% by weight of TMAH.

16. (Currently amended) The method of claim 10, wherein exposing ~~a-the~~ silicon layer on ~~a-the~~ semiconductor substrate to ~~an-the~~ etch solution consisting of TMAH and ~~the~~ at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, ~~phenol~~, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of approximately 6% by weight of TMAH.

17. (Currently amended) The method of claim 10, wherein exposing ~~a-the~~ silicon layer ~~on the semiconductor substrate~~ to ~~an-the~~ etch solution consisting of TMAH and ~~the~~ at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, ~~phenol~~, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of approximately 6% TMAH and approximately 94% propylene glycol.

18. (Currently amended) A method of removing a heat-affected zone ("HAZ") on a semiconductor substrate, comprising:
removing a HAZ on a silicon substrate without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and smoothing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic

solvent.

19. (Currently amended) The method of claim 18, wherein removing ~~a-the~~ HAZ on a ~~the~~ silicon substrate comprises removing the HAZ formed by laser ablation.

Claim 20 (Canceled)

21. (Previously presented) The method of claim 18, further comprising removing at least a portion of the silicon substrate other than within the HAZ using the etch solution.

Claim 22-44 (Canceled)

45. (Currently amended) A method of forming an aperture in a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone (“HAZ”) on the silicon substrate;
exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide (“TMAH”) and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and
removing the HAZ without removing at least one of an exposed oxide layer, an exposed nitride layer, and an exposed polyimide layer present on the silicon substrate; and
removing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

Claims 46-52 (Canceled)

53. (Previously presented) The method of claim 45, further comprising filling the aperture with a conductive material to form a through-wafer interconnect.

54. (Original) The method of claim 45, further comprising removing at least a portion of the silicon substrate with the etch solution.

55. (Currently amended) A method of forming a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone ("HAZ") on the silicon substrate;
removing the HAZ without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to a first etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and
filling the aperture with a conductive material to form a through-wafer interconnect; and
removing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

Claims 56-63 (Canceled)

64. (Currently amended) The method of claim 55, further comprising removing the at least a portion of the silicon substrate with athe second etch solution to enlarge a diameter of the aperture.

Claim 65 (Canceled)

66. (Currently amended) The method of claim 55, further comprising smoothing the at least a portion of the silicon substrate with athe second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

67. (Original) The method of claim 55, further comprising forming a passivation layer on sidewalls of the aperture before filling the aperture with the conductive material.